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Barbara Bornmann
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Light Movement & Sound: An Approach to Energetic Education

by Barbara Bornmann

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81 Columbia Heights #34
Brooklyn, NY 11201
718-858-4123

Energetic Education: Forward

Barbara Bornmann, 2015

Professional development is a lifetime experience, and as I look back on this thesis dated January 1995, I realize how much has changed over the past twenty years, and how much has stayed the same. This thesis “Energetic Education”, ultimately became the book “Energetic Education: How the Developmentally Disabled Teach Us” which drew interest yet was never published. The beginning of my career as a Creative Arts Therapist which was supported through my MALS degree, represents some of the happiest moments in my professional development as working with the population of developmentally disabled individuals was a continuous creative process and provided me with my first experience of meaningful work. This work is qualitative in nature and while so much has changed over the years, this is the part that has stayed the same.

Today, as Director of Therapeutic Rehabilitation at Kings County Hospital in Brooklyn, New York I am responsible for a large department of group therapists, mostly Creative Arts Therapists and within the framework of person-centered care we deliver psychosocial rehabilitation services to a culturally diverse, economically challenged population in need of behavioral health services. Person-centered care is empathically driven care that helps to put an individual in charge of their treatment. This is the part that has stayed the same.

The part that is different is that I am also a researcher and have developed through utilizing both qualitative and quantitative measures. The quantitative research methodology helps me to understand the larger picture of how different systems work together, or how to measure the efficacy of a proposed therapy, or identify problems and solutions within the delivery system of care.

We are making the book “Energetic Education: How the Developmentally Disabled Teach Us” available in the event someone is interested or inspired by the work, because that is the natural process of learning, we put work out in the world in the hopes that it leads to something else. The book shows some of the wonderful individuals I worked with who taught me how to communicate in their unique language and thus create with them. If you are reading this statement and would like to carry on this work please feel free to do so. As always, you can add a reference to your work and cite an unpublished manuscript.

Best wishes on your professional journey!

Barbara

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I Overview

Communication exists on several levels. A widely accepted definition of these levels of communication is the exchange of ideas through a symbolic, gestural or linguistic system. For the purposes of this paper, a broader definition of communication which includes the use of human energy is reached by categorizing these levels as: 1) The conscious levels of intelligence which are language, academic disciplines, artistic expressions; and, 2) The subconscious levels of non-verbal communication, gestures and body language; and, 3) The energy fields around the human body and how they may interact with other fields. The purpose of this paper is to develop an understanding of "Energetic Communication" based on the process of working with human energy fields and an understanding of how human energy can be affected by the theatrical experience. Working with the human energy fields of a participant is communicating on a deeper level, either physiological, subconscious, or energetic, and sensing problem areas which can then be addressed by a component of theatre. This process is a way of reaching participants both artistically and therapeutically without imposing a pre-conceived educational agenda on the participant, by allowing the process to be guided by the participant's own needs. Physically and emotionally the participants present blocks of energy and the techniques outlined are to promote physiological responses through creativity.

The first step is to understand "Energetic Communication" to

understand to be able to translate that into "Energetic Education." In a effort to support this thesis, areas of physics will be considered for formulating a basic understanding of human energy. Next, an anthropological look at ritual theatre will help to delineate the consciousness and physical experience of performance. Finally, the biological foundations of gestures will be explored, also referred to as neurolinguistic behavior, and include a discussion of non-verbal behavior using observations from my work.

Play is an important area of theatre education because of its ability to utilize active learning and the impulse to create, therefore play helps to define active use of human energy. Section VI presents a brief overview of theatre in education to help integrate Sections I-V with Section VII - Educational Approaches and Therapeutic Applications. This section includes educational approaches and therapeutic applications based on my work over the past year working with severely developmentally disabled adults. The topic of Energetic Education is explored from a multi-disciplinary perspective integrating physics, biology, anthropology, pedagogy, healing, philosophy, and theatre education with my teaching experience in both normal and severely developmentally disabled populations.

The examples used in this paper are empirical observations from non-traditional teaching experiences in which the normal avenue of linguistic intelligences were impaired. The first experience which invoked my interest in non-linguistic

communication was as a Visiting Director at The Academy of Performing Arts in Japan. Out of necessity the language barrier helped me to define and focus my energies on a different level. In reference to my three levels of communication, I moved from the first level of conscious intelligence to the second level of physiological communication, and began to understand the third level of Energetic Communication. The primary experience which reflects the therapeutic applications in Section VII is as a theatre educator at the Dean O'Hare Center in Brooklyn, New York, for developmentally disabled adults whose language and physical skills are extremely limited. As challenging as both these teaching experiences are they afford the opportunity to explore beyond everyday communication, to the physical, subconscious and energetic levels.

II Physics and Energetic Communication

This section will concentrate on developing an understanding of basic properties of light and sound, the shift in paradigms from Newtonian physics to quantum physics, field theory, universal and human energy fields, the theory of morphic resonance, and implications in relation to Energetic Communication.

Light and Sound

The similarities between light and sound are that both light and sound are measured by length, time and mass. The speed of light and sound is measured by distance over time. Light and sound are propagating disturbances generated from a source and may be perceived by sensory organs. They both can have their paths altered by objects which scatter or absorb some of the energy. Both require energy, momentum, and travel in waves, although light can also travel in particles or quanta. Both light and sound have resonance or waves that keep repeating, and frequency or oscillations per second. The frequency of sound is pitch, and the frequency of light is color. Both can be measured by amplitude or the size of the wave.

The basic properties specific only to light are that light travels in a straight line and travels faster than sound at 186,000 miles/sec. The speed of light is constant. Light can travel through a vacuum, but sound needs a medium to carry it. A light wave moves in electric and magnetic fields. Light has polarization or direction of travel and is measured by

wavelength. Sound has magnitude, direction, and velocity.

These statements reflect fundamental concepts of Newtonian physics, however, the most profound changes in scientific thought have occurred in the 19th and 20th centuries. Out of Newtonian physics whose principals were used to predict the actions of objects in our universe, came the field theory in the 19th century. The 20th century brought Einstein's electromagnetic particle theory, the theory of relativity, and chaos theory. In reevaluating Newtonian physics, the state of fixed atoms in the universe responding to cause and effect, Barbara Brennan discusses how the Newtonian universe was changed by quantum physics :

Modern science tells us that the human organism is not just a physical structure made of molecules, but that, like everything else, we are also composed of energy fields. We are moving out of the world of static solid form into a world of dynamic energy fields. We too, ebb and flow like the sea (19).

In a world which tries very hard to create permanence for the human condition, the changes in the ideology of a fixed universe being replaced by a continuously evolving one are quite unsettling. How does this make us feel? According to Rupert Sheldrake society views nature as an inanimate system which serves the purpose of supporting humanity. He believes humanity has dominion over nature because we need to feel that we control the environment, an idea which gives us comfort, and that we no longer are primitive cave dwellers.

In an effort to understand why the change developed from Newtonian to quantum physics, an historical view is helpful in

clarifying the issues. Sheldrake reports physics to be a system which quantifies phenomena which can be treated mathematically and then ignores the rest of the world. He goes on to state that:

physics need take into account only the mathematical aspects of things, their 'primary qualities,' these alone are regarded as objective. Other qualities known through the senses, 'secondary qualities,' are merely subjective, part of bodily experience, they do not exist in the objective mathematical world knowable to a disembodied mind (87).

These views expressed by Galileo in the 17th century directly supported the inception of Newtonian physics during the same period. The physical laws of Newtonian physics deny human experience as valid and quantifiable, thereby influencing our present thought from education to religion to medical practice. It is an ironic creation of mankind whereby in Newton's efforts to define abstract existence he negates his own. Yet this mechanistic view of the world still dominates according to Sheldrake because it is the accepted view of industrial civilization.

The changes in Newtonian physics began to take place in the early 19th century when according to Brennan, Newtonian physics was unable to quantify newly discovered physical phenomena. A new model of the universe developed which extends matter into energy fields which are constantly interacting. In an effort to extend the Newtonian concept of the attraction of positive and negatively charge atoms, Brennan reports that another view was offered by Michael Faraday and James Clerk Maxwell, who developed the field theory to define the energetic disturbance in the space

around a charge and to determine that this space will affect another charge when it is present. In other words, a force is present in the space around a charged particle. Field theory created a situation which challenged the limitations of Newtonian physics.

Sheldrake maintains that "in the present century, the field concept has been extended to gravitation and to the matter fields of quantum physics, making fields *more fundamental* than matter" (83, emphasis added). A field can best be described by visualizing two magnets placed six inches apart and the connecting circular patterns made by iron fillings responding to the magnetic field. Sheldrake reports that Faraday likes to think of fields as "mere space." Faraday preferred "space" over "aether" as the conducting matter of fields, which later influenced Einstein to also identify space as the medium for electromagnetic fields in his special theory of relativity. Einstein then extended the field concept to both gravitation phenomena and quantum theory. Sheldrake, like Brennan, emphasizes the fact that atoms and other quantum systems, are not solid matter impervious to change. He maintains that energy fields are the modern building blocks of physical reality.

Universal energy became the unifying concept in physics :

Seventeenth century mechanical universe of matter in motion possessed a variety of ingredients that were separate from each other: matter itself, made up of indestructible, passive atoms; motion, the attractive forces of gravitation; electrical and magnetic forces, light, the forces of chemical combinations and heat. The modern conception of energy provides a unifying principle for them all (Sheldrake, 88).

This quote perhaps best supports my title for this paper: Light Movement & Sound: An Approach to Energetic Education. I see this title as a linguistic equation which transforms identifiable aspects of Newtonian physics (light, movement, and sound, or as I prefer "light movement" which indicates an energetic kinesthetic movement similar to an energetic touch without physically touching) into the quantum language of Energetic Education. The purpose of crossing this bridge is to create a different perspective of how teachers are able to affect their participants/students.

According to Sheldrake, Einstein's equation $E = mc^2$ (where E is energy, m mass, and c the velocity of light), hypothesized energy and mass to be both equal and transmutable. Therefore, this equation supports the view that nature is composed of energy fields, and offers a more holistic view of nature because it embraces an integration between humanity and the environment. If we try to apply this concept to our everyday reality we would probably have difficulty. Does this mean that the object (mass) can evaporate into energy (e)? Brennan supports the transmutation between matter and energy and views mass as energy which has solidified because of its slow movement or vibration.

Human Energy Fields

The next question is if all nature is made up of energy fields then how does this apply to humans? The definition of the human energy field according to Brennan is the field of energy integrated closely with human life. Although many visionaries

have been able to see the human energy field or aura, it can be more readily experienced by walking into a room and sensing the presence of other people. Since humans as part of nature have energy fields this means that human energy fields are interacting all the time. However, according to Sheldrake's theory of morphic resonance a human being doesn't need to be in close proximity to another human being in order to experience their energy fields.

Morphic Resonance

Sheldrake developed "the hypotheses of formative causation, (which) suggests that self-organizing systems of all levels of complexity - including molecules, crystals, cells, tissues, organisms, and societies of organisms - are organized by "morphic fields." (111) Therefore morphic resonance is the process of how past morphic fields influence the present, a process in which like resonates with like over a period of time. Morphic resonance involves a transfer of information through space and time in a way that might be described similarly to Jung's collective unconscious. Imagine having access to all possibilities of creative thought through the airwaves or fields and the likelihood that any creative thought will manifest through space and time, simply because the thought occurred. An example of this might be if a rat were taught a new trick somewhere in Africa, the fact that the rat learned the new trick now makes it easier for a rat in Oklahoma to perform the same trick. Another example given by Sheldrake is :

For example, when a newly synthesized organic chemical is crystallized for the first time (say a new drug), there will be a morphic resonance from previous crystals of this type. A new morphic field has to come into existence, of the many energetically possible ways the substance could crystallize one actually happens. The next time the substance is crystallized anywhere in the world, morphic resonance, from the first crystals will make this same pattern of crystallization more probable and so on. A cumulative memory will build up as the pattern becomes more and more habitual (111).

Sheldrake maintains intellectual creativity as being equivalent to the biological process of creativity.

Energetic Communication

With all of these theories taken into account, what then are the possibilities for Energetic Communication? As previously noted, if matter and energy are in a constant state of flux, and both are contained by energy fields, then there is a constant communication or exchange between matter and energy. Human beings therefore must be both matter and energy. When a teacher walks in a room s/he is not only met with students attempting to size him or her up, but also the energy fields of the students and teacher interact. From the moment s/he walks in, learning is taking place on an energetic level. If his or her energy is coming from a healthy, positive place of openness, and energized creativity, the students will immediately respond because s/he has altered their energy field by using his or her own. S/he can physically go into a student's energy field and work at a bodily-kinesthetic level, perhaps by physically engaging the student in an exercise that will open up his or her energy or change a negative pattern of the student. Another possibility would be

transmitting thoughts by actually attempting to clearly transmit a thought, without speaking. In other words, being fully present and concentrated will actually help the students think clearly. This mental concentration or attention is what Mihaly Csikszentmihalyi refers to as psychic energy, an energy which he feels is necessary to maintain order in the classroom. In summary, there are three ways for a teacher to interact on an energetic level, by changing one's own energy, by working with the energy of the participant/student, or by transmitting thoughts to the participant/student.

According to morphic resonance, if I can help one disabled person who speaks in the one word sentences to sing a song, then it makes it easier for other participants to learn to sing or to use language, because someone has learned to open up. In the case of the developmentally disabled participants, they have been known to deliberately stop speaking for years at a time, so how can we affect them so that they want to speak? If we gently and consistently offer our open hands to these participants perhaps they will experience the trust necessary to exercise their voice, although they are within their rights not to speak. These participants are far more creative than the average or even highly educated person, and it's unfortunate to waste their abilities.

The purpose of tapping into the energy field in educational theatre is to release creative energy. How do you help participants/students to engage in creativity when they have

cultural or physical limitations? In theatre education, interaction is a primary goal. Field theory and morphic resonance offer tremendous opportunities for support of interaction or Energetic Communication. Energy can transfer in a positive or negative fashion. Garvey reports on the experience of "group glee" which "manifests itself in a sudden wave of screams or giggles," and "appears to possess all the children simultaneously or spreads like wild fire" (21). In a negative context, contagion among the developmentally disabled is a frightening experience which promotes violent interaction, therefore the objective is to maximize and utilize positive energy.

With a parallel between the conception of atoms as passive participants in the universe and the methodology of traditional education, we need to consider how the concept of change can affect education, as we move on to an applied anthropological exploration of how communication happens.

III Theatre Anthropology

Richard Schechner expounds upon the phenomena of "performing anthropology" and "theatre anthropology" and refers to his own work observing cultures as defined by "points of contact." His first point of contact is the transformation that happens when culture becomes performance. From his observations of the deer dance of the Arizona Yaquis he wondered whether the performer was transformed to a state of being which was neither a man or a deer. While he watched the performance, watching the mask of the deer he believed he was watching a deer, yet the uncovered portion of his face let him know he was watching a man. Schechner defines states of cultural performance with the following terms: "characterization," "representation," "imitation," "transportation," and "transformation," to represent the liminal experience. In the case of the Yaquis the transformative dance is one of crossing over to the spiritual realm in which free spiritual beings materialized in the physical world. This describes a cultural understanding of $E=mc^2$.

This world of ritual illuminates the consciousness of the performer of ritual to show :

that it activates alternatives: 'this' and 'that' are both operating simultaneously. In ordinary life people live out destiny - everything appears predetermined: there is scant chance to say 'Cut, take it again.' But performance consciousness is subjunctive, full of alternatives and potentiality. During rehearsals especially, alternatives are kept alive, the work is intentionally unsettled. This celebration of contingency - a true, if temporary triumph over death and destiny - describes even ritual performances, especially those rituals conducted by old masters whose ability to improvise is not denied them" (Schechner, 6).

Schechner discusses another point of contact as the intensity of the performance. He observes that performers and audience interact or collaborate in the theatrical process in which the audience allows the performers to affect them. This experience in the intensity of performance is similar to the flow experience defined by Mihaly Csikszentmihalyi later in this paper. The performer-audience interaction is an energetic exchange. According to Schechner "a great performance modulates intervals of sound and silence, the increasing and decreasing density of events temporally, spatially, emotionally, and kinesthetically," thus involving the audience in the present moment both physically and emotionally (11). In Schechner's observation of the whirling dervishes in Turkey, he notes that the process and intensity of accumulation and repetition seems to be used to transcend time and to achieve a trance-like state. From these examples we observe that intensity is the desired state, whether the performance is a cultural ritual or a great performance.

The performer-audience interaction is reported in the context of a Korean religious service in which the shaman, the priest and the congregation achieved a state of ecstasy by their active participation in the service. Yet Schechner notes that the area of performer-audience interaction needs further research. He also notes that the period after the performance needs to research both the audience and the performer's experience.

Schechner has studied and theorized about the world's earliest theater which he identifies as existing during the paleolithic period in the caves of southwest Europe. Schechner offers a theory of the performances of the dancer shamans of the paleolithic temple theatres. In his attempt to identify the "scripts" used for these performances he recognizes that the written word was a much later development. He perceives of this paleolithic culture as "unliterate" or perhaps living in a spatial domain. Schechner reports from some of his earlier writings that :

Drawings and sculptings which in the modern world are associated with 'signs' and 'symbols' (word-likeness) are in paleolithic times associated with doings (theatre-likeness). Thus the 'scripts' I am talking about are patterns of doing, not modes of symbolization separate from doing. (22)

Ritual theatre was therefore a physical bodily-kinesthetic process of communication, and perhaps, a more vital or animistic process of communicating. This illustrates a way of knowing using the body which exemplifies the physiological level of communication.

In relation to the process of learning through the physical body, Schechner talks of the distinctions between "body learning" from "head learning." He also notes that it is the body that must transmit and communicate the performance. Focussing on "body learning" is in direct support of Energetic Communication by actualizing physical energy which is then transferred through the energy field rather than by verbal communication. Schechner offers an alternative view to the Platonic-Aristotelian idea that

art imitates life, as that of a mobius strip, or perhaps a continuous exchange of energy between theatre and life.

Reporting on a conference in Calcutta in 1985, Schechner relates that "theatre director Mohan Agashe of Pune, India pointed out that the relationship among genres and cultures within India itself cannot simply be one of taking this dance step, that rhythm, or that story, but must be something more like metabolism where deep learning takes place" (24). This concept of learning by experiencing the rhythms or metabolism of a different culture is one which has, in retrospect, illuminated the process of my teaching experience in Japan. Having complete freedom of methodology, content and style, yet without teaching guidelines, I had to search for a way of communicating with my Japanese students having a limited use of language through a translator. Before my very first class I wandered into the parking lot where some of the students were practicing a form of movement called kiko, which is a sort of moving yoga. I immediately jumped in as a student to let those students teach me, and when the sensi (a Japanese teacher) arrived I continued in the class as a student. The curriculum of the school was set up that all the classes started with this movement discipline. I always joined as a student, sometimes being taught by my students and sometimes by the sensi. I was trying to understand their metabolism so to speak, their sense of balance, movement, rhythm, strength, and their ability to move as a unit through cooperation and unification. Schechner uses the work of Peter Brook to summarize

this kind of learning in Brook's quote "Our work is based on the fact that some of the deepest aspects of human experience can reveal themselves through sounds and movement of the human body in a way that strikes an identical chord in any observer whatever the cultural conditioning" (27). At the time, I was unaware that my intelligence was being exercised on a physical level. However, it was communicating on this physical level and experiencing the positive results of this reciprocal teaching experience, which led to a clear understanding of human energy fields.

IV The Biological Foundations of Gestures

In this section we turn to the neurolinguistic behaviors or the study of gestures to continue the exploration of non-verbal communication. Adam Kendon in "Current Issues on the Study of Gestures" explores the idea that gesture and emotional expression are not synonymous. Therefore observations have shown that the physical manifestations of energy can be emotional but are not necessarily so. Kendon identifies two types of gestures. The first type is gesticulation or "all gesturing that occurs in association with speech and which seems to be bound up with it as part of the total utterance is referred to as gesticulation" (31). The second type is autonomous gestures or "gestures which are standardized in form and which function as complete utterances in themselves, independently of speech, are referred to as autonomous gestures" (31). A gesture system is sign language.

Kendon is of the opinion that speech and gesture are unified. Kendon reports that studies have shown that gesture and speech are organized separately, and then integrate to support the process of communication. Kendon also uses studies of young babies which support the thesis that gesture is the child's first attempt at language, its first attempt at communication. Although gesture is more immediate than language, it is an ability which increases with the onset of language. Therefore gestures are expressive communication prior to language, and seem to develop in conjunction with the development of language.

Kendon reports on cultural differences by citing a study by Efron which compares the Southern Italian pictorial gestures with the abstract gestures of East European Jews. The results from this study show that gesture represents two very different processes. One represents internal mental processes while the other represents external or social communication, each in their own cultural context. Kendon believes that the study of gesture is a powerful modality to understand communication, and that the study of gesture is more important than language. However, it's an area which continues to be neglected, probably because of the continuing American obsession with written language and mathematics.

In "Gestures: Nature and Function" Nespoulous and LeCours create a system of semiotics for gesture which is much more difficult than language. According to Marcel Kinsbourne in "Brain Organization Underlying Orientation and Gestures, Normal and Pathological Cases" from the point of view of neuropsychology there is no isolated section of the brain which controls gesture, according to studies of brain damaged patients, therefore gestures do not exist. In response to Nespoulous and LeCours, Kinsbourne maintains that "there is no brain center for semiotic behavior" (65). Kinsbourne does support the view that autonomous gestures, defined by Kendon as gesture used instead of language, are connected with right hemisphere functioning.

Kinsbourne makes the distinction between self-touching and free moving gestures. These self-touching gestures which

according to Kinsbourne have no inherent meaning are responses to peak in arousal or anxiety and these gestures allow a release of activity in some overly stimulated part of the brain. In using examples of the behavior of some retarded individuals such as head banging or whirling, or speaking a sentence to nobody in particular, these responses "are all devices, using different output mechanisms, to diminish excessive arousal" (67). In Section VII, an important therapeutic theatre application is to exercises to release excessive energy which can cause emotional disturbance and violence.

Kinsbourne maintains that the physical act of pointing, develops by eight or nine months along with spatial orientation and other physiological changes such as opening of the mouth, and widening of the pupils. She observes that this development includes babbling then speaking, and that it can be communicative but is not necessarily so. Because children point at nothing in particular, Kinsbourne interprets pointing as orientation. Developmentally disabled adults are in a continual state of orientation in which their gestural and language expression may be communicating and may be self-stimulating.

Colwyn Trevarthan reports in "Form, Significance and Psychological Potential of Hand Gestures in Infants" that hand movements are an essential facet of communication. According to Trevarthan these gestures are in five categories: manipulative, self-regulatory, emotional, indicating, and symbols. He notes that these five categories integrate normal or natural

communication. Trevarthan goes on to state that these integrated expressive hand movements are the conduit for the artistic expressions of dance, visual arts and musical performance.

According to Trevarthan, after 3 months of age a baby will engage its mother in a sense of play in which :

Many of these games involve the hands, the child readily understanding the capacity of both his or her own hands and the mother's hands to act as if they had personal properties of purposefulness and emotional feelings. . . games, changes, songs and bodily games control hand movements, touching etc. in synchrony with vocal shifts and large head and face signals. Repeated rhythmic patterns of hand waving, touching, tickling, clapping, etc. form the backbone of many games and cause infants over 3 months of age to laugh and vocalize. By 20 weeks infants often show eager anticipation of the development and denouement of such practiced sociodramatic ritualism in play (173).

In relation to games as communication, Trevarthan observes that the process in singing games is a playful interaction of eliciting and predicting actions and expressions.

Sidney Segalowitz in "Some Implication of Lateralization for Developmental Psychology" reports on a study that determines linguistic ability to be connected to the left hemisphere. However Segalowitz observes that visual searching, emotional interplay and facial examination are located in the right hemisphere. Howard Gardner in Frames of Mind would agree with the conclusion that linguistic intelligence is located in the left hemisphere, however he notes that linguistic ability is more centrally located in the right hemisphere in females. (87)

Segalowitz is concerned with the questions he has regarding the efficacy of neuropsychology as the determinant of heterogeneous cognitive growth, as opposed to a theory of unitary

cognitive growth. This question proposes a conflict between the work of Piaget and Gardner. Gardner proposes a theory of cognitive "heterogeneity" which Segalowitz maintains is well supported by current work in neuropsychology, which is in opposition to Piaget's support for a unitary theory. These two oppositional theories are perhaps best described by Lecours, Nespoulous, Desauloners in "Standard Teaching on Apraxia" who discuss the left and right hemisphere of the brain as "two modes of human cognition, the analytic or deductive mode for the left hemisphere, and the holistic or inductive mode for the right one" (231). The work outlined in Section VII of this paper is clearly holistically oriented. It is less important for me to be able to ascertain which part of my developmentally disabled adults brain is damaged, than it is to understand the energy of the human being, how and what do they respond to, and what makes them happy.

Eric Aray in "New Perspectives on Apraxia and Related Action Disorder" reports that "Apraxia involves a disruption of the performance of gestures, both transitive (with objects) and intransitive (without objects) and/or more complex sequential motor acts, such as putting a letter into an envelope" (243). This defines both the problems and the goal of teaching apraxia participants. The question posed by the definition of apraxia, "complete or partial loss of memory of how to perform complex muscular movements, resulting from damage to certain areas of the brain," is whether or not a disabled participant has previously

learned the movements. (Webster's, 68) The task of working with the developmentally disabled population is to find out if they are able to learn, and what they already know. It's a way of understanding how memory and learning are linked together.

For example in preparing for our talent show with the Dean O'Hare participants, I chose songs that the participants responded to positively. The participants indicate a positive response by subtle physiological responses in body position, facial expression and energy excitation. When three days before the show I realized I was losing, due to illness, my singer for "Under the Boardwalk," I had to find a replacement. Joe who had the microphone didn't know any words and Bess positioned herself close to Joe. When I gave her the microphone she sang "Under the Boardwalk, down by the sea," and I was ecstatic. When we ran through the song with the music she was able to sing two full verses!

Bess is a woman in her late forties who only speaks in one word sentences, if at all, and is unable to tell you her home address. My immediate sense about the situation was that this was a song that she already knew, and that I tapped into her memory. However the point is that if she has memory, in this case linguistic and musical, then she has the ability to learn, which I've also confirmed. Four months after the talent show I played the tape from the talent show and Bess suddenly sang all the words to the first verse of "Dream Lover." I asked her if she remembered the song, she replied "No." I asked her, using

language accompanied by gesture as we often do, if she was learning the song and she replied "Learn." Assuming that her verbal responses "No" and "Learn" represent their intrinsic meaning, it would follow that from the time she hears a song, she begins to learn the words. A teacher never knows when the bird is going to fly out of the cage. The task is to open the door.

V Play in Education

This section presents summaries of several social scientists and their views on play in education. Play and games are a primary component in the development of theatre in education.

Garvey

According to Garvey the extant theories of play known as instinctive preparation, recapitulation, and surplus energy have contributed to modern theories of play. She reports on an area of study which interests the psychiatric profession as well as the area of theatre education known as psychodrama, as the way in which children will repeatedly act out their fears in their role playing games. Therefore this behavior suggests that play provides a cathartic or emotional release.

The characteristics of play noted by Garvey are:

- 1) Play is pleasurable, enjoyable even when not actually accompanied by signs of mirth, it is still positively valued by the player.
- 2) Play has no extrinsic goals. Its motivations are intrinsic and serve no other objectives. In fact, it is more an enjoyment of means than an effort devoted to some particular end. In unilateral terms, it is inherently unproductive.
- 3) Play is spontaneous and voluntary. It is not obligatory but is freely chosen by the player.
- 4) Play involves some active engagement on the part of the player. (4)

Garvey points out the fact that play is part of other processes of growth, such as creativity, problem solving, language learning, and the development of social roles. Garvey reports that according to Piaget's development of the child,

there are three stages of play development: 0-2 years - sensorimotor play, 2-6 years - symbolic or representational play, 6+ - play with rules. In the process of discovering objects which occurs during the sensorimotor and representational play stages, Garvey notes four steps: a) exploration, b) manipulation, c) practice, and d) repetition, which suggest a process of trial and error.

In relation to which species play, Garvey reports that "play seems to be associated with the potentiality for adapting to changing circumstance. The more flexible an animal is the more likely it is to play" (28). Therefore the severely developmentally disabled do not normally engage in play because of their physical limitations.

Garvey poses a question of whether play promotes creativity, and reports on a study done by Kathy Sylvan which suggests that creative and imaginative behavior enhances problem solving. Toddlers engage in "object-centered" activity in which the focus of attention is on an object rather than each other. There is also a strong "possession" factor in which toddlers respond strongly to ownership of objects. The manner in which children engage in expressive behavior is supported by Erik Erikson's statement "that the metaphoric expression of intimate experiences in free play 'loosens' the communicability of these same experiences, of course, the main rationale of play therapy" (667-692).

Garvey defines three types of social play with language:

spontaneous rhyming and word play; play with fantasy and nonsense; and play with speech acts and discourse conventions. The language capability of the developmentally disabled population at the Dean O'Hare Center is in the 0-6 years of age. I had one experience with a participant who was attempting to stop a peer from using drum sticks against the table. He said to the drummer, "Cut it out" and then picked up a pair of scissors and made a cutting motion. On another occasion, I had a participant make a pun about my black shirt and the fact that he was black. There are also examples of participants using rhythms like "Jingle bells, William smells." These language examples are representative of Garvey's first type or spontaneous rhyming and word play.

Garvey defines make believe as "a voluntary transformation of the Here and Now, the You and Me, and the This or That" (82). Parallel to a drama in theatre, the make believe encounters involve Garvey's components of roles or identities, plans for action or story lines. and objects and settings. The play of children reflects the society in which they live and their own understanding of social roles and values. Since the studies and resources presented by Garvey are predominantly white and middle class, her data reflects gender specific generalizations regarding the play of girls and boys.

In order to enhance cooperation and communication among the developmentally disabled population, working with the whole group is preferred to working with individuals. According to Garvey

"emphasizing group activity and the communicative aspects of pretend play have been shown to increase children's cooperative behavior and to contribute to better performance on team problem-solving or construction tasks" (99). Garvey states that motivating psychological factors include chance and testing one's limitations in competitive games.

The final note in Garvey's book deals with ritualized play. Perhaps the primitive sense of repetition and ritual is part of the recapitulation stage defined by G. Stanley Hall earlier in the book whose theory proposes that humanity continues to repeat rituals and patterns of behavior. Garvey notes that "the message, 'This is play,' is emblazoned on the ritual" (121). This message about ritual can be taken a step further to say that "This is a play" in a theatrical context, and part of a very ancient and clear human experience.

Csikszenthmihalyi

By the study of play experiences which affect intrinsic rather than actual rewards, Mihaly Csikszenthmihalyi explores the behavior and beliefs of adults in the play experience. People who engage in play activities go against the grain of society where as Csikszenthmihalyi states "the management of behavior, as presently practiced, is based on the tacit belief that people are motivated only by external rewards or by the fear of external punishment" (2). Csikszenthmihalyi focusses his study on what motivates people to engage in play activities which are "autotelic" or give pleasure.

Csikszentmihalyi believes the environmental problems caused by a materialistic society will destroy our planet. With the seriousness of this suggestion, Csikszentmihalyi attempts to understand how to extend play into all aspects of living so that humanity can let go of its materialistic and industrial grip. Csikszentmihalyi rejects both the behavioral and psychological explanations of play as reductionist and unrealistic.

If rewards are not external than why do people play? In continuing to explore these questions Csikszentmihalyi follows-up on the work of Groos (1901) and Buhler (1930) who presented the concept of "Funktionlust." Csikszentmihalyi states the concept of funktionlust to be a pleasing experience in relation to physical potential. Other criteria of autotelic experience are cited as "freedom" and "control." This may sound contradictory but in fact these components are inseparable. In expressing the freedom and challenge of rock climbing Csikszentmihalyi notes that danger is the motivating factor which forces the climbers to control their actions. According to Csikszentmihalyi, psychological motivations are self-discovery, transcendence, and challenging one's physical limitations and skill.

Csikszentmihalyi defines the experience of play activity for intrinsic enjoyment, the autotelic experience, or holistic and total involvement, as flow. He notes that anthropologists refer to flow as a native category perhaps to denote a more primitive or animistic experience. Flow is further explained by

Csikszentmihalyi as an integration of the physical and mental abilities, a focussing of attention or a tunnel vision, and a third characteristic is "loss of ego" or "transcendence of individuality" or "fusion with the world." Csikszentmihalyi states that "Besides play and creativity, experiences analogous to flow have been reported in contexts usually called "transcendental" or "religious" and even "accounts of collective ritual" (37). One unifying factor of all flow activities is defined by Csikszentmihalyi as a microcosm of experience which the participant can control.

Aspects of rock climbing support theatre in education. Csikszentmihalyi uses examples of rock climbers' terms to describe the flow experience which are analogous to theatre, such as centering, being in the here and now, and being in the present moment. Another feature similar to theatre in education perhaps best described by Schechner's "intensity of performance" is that of participation in what Csikszentmihalyi refers to as a sense of participation and immediacy. In support of play as education, Csikszentmihalyi notes that "games, artistic and scientific creativity, and religious ritual and ecstasy also provide an organized set of opportunities for action, a limited stimulus field, clear goals and feedback, a chance to be in control of the activity, and a feeling of transcendence of self" (138).

What Csikszentmihalyi refers to as microflow activities can also be experienced as the patterns of everyday life, such as interaction with others, fantasy, and physical movements.

Csikszentmihalyi distinguishes between the bodily kinesthetic type of personality and the social type of personality. He notes that people involved in "kinesthetic activities described themselves as more free and in control, while people high on social activities saw themselves as more constrained and out of control" (157).

In support of play as a positive experience in education, Csikszentmihalyi reports that "play provides mental and physical stimulation, results in feelings of competence, satisfies psychic needs not met by working, and allows for learning new roles" (161). In theatre education learning new roles is a primary catalyst for personal competence, self-awareness and self-esteem.

The object of Csikszentmihalyi's experiments were to determine the importance of play. The results he reported were that the participants in the experiment felt deprived while not engaging in microflow activities and were subsequently more irritable and less playful and creative. The experience of flow deprivation is similar "to various pathological states, there may be a relationship between lack of flow and severe life disruptions" (170). In the developmentally disabled population the objective is to create a flow experience using theatre. If flow is essential to normal functioning then the teacher must consciously attempt to create a flow experience. According to Csikszentmihalyi humans consciously create their flow experience. Csikszentmihalyi points out that "Plato to August Comte and Aldous Huxley have insisted that the use of the body in

physical exercise and artistic discipline should precede book learning" (205). Isn't it time to take this seriously?

Steiner

In combining the anthropology of Schechner and the inner motivation of Csikszentmihalyi, Mary Richards explores the work of Rudolph Steiner in Toward Wholeness: Rudolph Steiner Education in America. Rudolph Steiner looks at the inner integrity of humanity calling it "Anthroposophy" or what he calls the inner languages of anthropology. He places his focus of teaching on the wholeness of humanity which includes this inner knowledge. According to Richards, "Inner development is the education of soul qualities, spiritual qualities, ego strength, differentiation, will, thinking, feeling, and breathing" (5). The Steiner consciousness includes the entire universe, not just humanity as a separate form, and uses life as an educational model. He also promotes the idea that physics and natural science supports a spiritual consciousness, and are perhaps becoming spiritual science. Steiner is dedicated to the concept of manifesting spiritual energy into physical energy by understanding spirituality and transforming it into a creative reality.

In applying the Steiner philosophy, Richards observes that "the child learns through story and drama, through color and rhythms, through movement and interplay" (26). In an effort to balance the intellect with feeling and will, Steiner allows the child's first experience to be as the playwright before reading

others' works. This integrative approach towards wholeness allows the student to see and assimilate feeling with artistic expression. Plays in the Steiner world, as far as content, are based on themes common to plays in general such as change and conflict. Additional focus is given to music which is used throughout the curriculum because it represents a "cosmic wholeness."

Teacher training for the Steiner schools includes art, experiencing color, speech, exercises, language, tongue twisters, what appeals to the senses, and eurythmy or moving to music and feeling the sounds in a way which promotes awareness of others. For the students, painting, modeling, music, movement, speech, architecture and drama are not electives. The foundations of play are formed in the kindergarten which is in fact a playroom. Richards notes that the kindergarten teacher pays careful attention to children at their play, because their play will affect both behavior and work as they grow. Play and the development of artistic sensibilities are at the heart of the Steiner approach to education.

Steiner has a unique view on how energy is transformed by humanity :

Growth and decay form the polarity of ongoing dynamic life. Decay is implicit in growth forces and what is understood as part of wholeness. Decay enables energy for growth to continue to develop and transform. The trick is to stay in touch with the whole rhythm and to see that clinging to old forms is antilife. To be willing to die into renewed life, to be willing to relinquish that which now needs to change, is to be willing to live creatively (147).

I end this section with this quote because of its accuracy in

describing the dynamic energy of the creative life.

VI Theatre in Education

In this section we briefly explore the components of theatre in education to give the reader a context wherein to integrate the concepts of Energetic Communication into Energetic Education.

Theatre in education or TIE has its historical roots in Britain in the 1960's. The purpose of TIE according to Christine Redington "is that its presentations in schools should educate, widen pupils' horizons, and lead them to ask questions about the world around them, as well as entertain" (1). Essentially the British took the concept of children's theatre and expanded it to include an educational component. Theatre can be used to illustrate social, political, cultural, and historical concerns to its audience. The early TIE companies took theatre off the stage and brought it into the classroom. The programs which ensued are designed to involve students as active participants in the process of learning.

According to Redington, theatre in education involves two areas of academic interest, "theatre" and "education" both of which are process oriented, therefore influential components from each are incorporated. She evaluates the components of theatre as: structure or plot, character, conflict, resolution, its ability to invoke emotions, to physically engage the audience, creating group activities, use of costume, props, set and lights, as useable components to support an educational program. She elaborates on the educational components which are: concepts of child centered age-specific education, use of play, learning by

doing, project teaching (or developing projects), problem solving, language development, and use of drama in education (utilizing the skills of a drama teacher in a secondary school), as elements in developing a method of learning.

I propose using theatre in education as a cumulative artistic experience which includes the visual arts, music, dance and poetry. This artistic integration offers an effective response to Plato's well known disdain for the drama, and rather recognizes its potential to engage students on an intrapersonal, interpersonal and social level.

This is not a move towards anti-intellectualism, but an acknowledgement that most humans are unable or perhaps unwilling to engage in the dialectics of philosophy, therefore the intellectual common denominator of existence must be experienced and expressed on a more holistic, physical level.

VII Educational Approaches and Therapeutic Applications

This section will include examples of my work at the Dean O'Hare Center in Brooklyn, New York, with low-functioning developmentally disabled participants.

When I embarked on the path of using theatre to reach the developmentally disabled, there were several obstacles in my path. First, I had to address my own fears of working with severely developmentally disabled individuals. These personal fears included being exposed to dangerous diseases, practicing universal health precautions, and violence. These obstacles were overcome by developing a working holistic philosophy which embraces the disabled as whole human beings, each with their own unique composition of life energy. I had to accept both the physical and intimate interaction of our energy fields. The second obstacle was to develop a theatre program which would serve the needs of this population. My goal was to investigate whether theatre is a viable teaching tool, by identifying the components of theatre which support this population and then by developing appropriate applications. Yet another obstacle was presented during the course of my work in response to violent behavior, and that is self-defense. This unfortunate consequence needs to be addressed to protect the teachers, who at the same time must protect themselves and the participant. Seen in a different light, self-defense could be a panacea for the 21st century female teacher.

Through working with the developmentally disabled

population, I learned from them which areas could be appropriate for their benefit by slowly introducing new concepts and measuring positive responses. The following areas summarize the therapeutic theatre education approaches: bodily kinesthetic awareness - mobility and flexibility of the body, breath, vocal development - using sound, tension release, relaxation, cooperation and awareness of peers - theatre exercises in pairs and groups, play, energetic interaction - working with the energy field of the participant, self-expression, singing and dancing, playwriting, and language prompting.

Creating a safe environment is crucially important because if the participants do not feel safe they will not participate. Each day a new atmosphere needs to be created. The teacher must engage in a process of communication to assess the energy levels of the participants. At this point the teacher may decide how to work with them, whether they need to be stimulated or relaxed, energized or balanced. Karl Konig, who, along with other Jewish peers escaped Germany organized the foundation of Camphill in 1940. He accurately describes the need for creating a safe environment :

It was, to many of us, a revelation to see how 'normal' handicapped children are... We realized the need of these children to be accepted into a closed social surrounding which, on the one side, would provide for them a sheltered environment and, on the other side, the possibility to unfold their individual qualities" (23).

My job is not to change the participants, but to help them cope with their lives and bodies, to relax, to release, to open up, and better communicate. As an educator the task is to tap

into their creativity and enhance their self-expression. As a healer the task is to help them to release negative energy, and to help them feel good about themselves. Since major obstacles appear on the physical level and their communication skills can be defined as gestural to six years of age, I work with them on a bodily kinesthetic level. Perhaps we, teacher and participant, are communicating in the manner of some ancient ritual.

Bodily-Kinesthetic Awareness

Bodily-kinesthetic awareness incorporates and develops mobility and flexibility of the body. John Dewey points out that one of the most difficult areas with the disabled is mutual accommodation and adaption, or their ability to recognize each other's needs. Therefore, knowledge of the body and knowledge of each other are the primary objectives. In the theatre, the performer's tool is the body, therefore physical flexibility, vocal range, and emotional diversity increase a performer's expression. Bodily-kinesthetic awareness includes intense concentration on the entire body by isolating as many parts as the participants are able to identify. I concentrate particularly on the extension and flexibility of the spine to release energy. The higher functioning participants can then engage in isolation and movement. Dancing and using physical rhythms are also popular to increase the awareness of the body in relation to personal space.

"Energetic Assessment"

Energetic Assessment is a process of communication which

allows the teacher to intimately understand the participant by sensing their energy field. Many holistic therapeutic processes are built on the supposition that the cells of the body in fact the entire body, retains memory of the entire life experience. For example, I was standing about four to six feet away from Bess and suddenly I could see her as a pregnant woman, her body looked pregnant, and I was startled by my sense of her as a mother. My sensibility towards her now embraced what turned out to be a more truthful concept of who she is as a woman. This was during the same timeframe when she decided to sing "Under the Boardwalk." I'm not suggesting that my assessment and her ability to sing was a causal relationship, but I am suggesting the appropriateness of being able to make an energetic assessment to clarify the teaching process and human interaction. After this incident I read her file. She was raped and bore the child. They took the child away from her and put her back in an institution. This process of Energetic Assessment is an example of reading or understanding the energy field of a participant. This process can be learned with practice and awareness.

Breath and Sound

I have been using the following procedures to create an "Energetic Atmosphere." In a circle using Tibetan bells, I cleared the energy in the center of the space, and then from each individual, by ringing the bells around their bodies. I would accentuate breathing through the process by asking the participants to breathe in and breathe out. I had them breathe

in and out as I used the bells to clear down their chakra energies on the out breath. I stood in front of them and connected energetically to each individual. We stomped our feet to feel grounded with a sense of weight, sense of height, and vertical connection. They loved when I put the bells on either side of their ears. I used bells periodically to clear their energy. I used my extended arms to connect to them without touching. This process creates a sensitive atmosphere in which intimate emotions can be expressed.

Tension Release Using Sound

As Alexander Lowen said "The therapeutic task is to remove the obstacles that prevent the body from spontaneously releasing its tensions" (236). In accordance with bioenergetics, I work with the participants at the Dean O'Hare Center to help them to move and release tension from the body using sound. Needless to say, the participants who are either emotionally imbalanced or aggressive need little coaxing with this exercise. In an effort to engage the whole class, I use an imitation game in which one participant makes a movement and a sound and the others follow. My purpose again, is to create an atmosphere where the participants feel safe and secure enough to express themselves and release energy.

Play

Play is an area which I always encourage with the participants. As stated earlier in this paper, the developmentally disabled play less than normal populations

because of their physical restrictions. If I come in the room and participants are playing with a ball or chasing each other, we make a game out of it. If they are playing a ball game, then we can combine the passing of the ball with movements, sound or words. I also do exercises with them in which I demonstrate or ask them to be animals or mountains or monsters and then let their play develop out of their physical state. We make fun of each other, tickle and tease each other. They love the unexpected, especially when their teacher makes a silly mistake.

Energetic Interaction

Energetic Interaction is a process in which we stand in a circle and create an Energetic Atmosphere. After creating the foundation or atmosphere we split up into pairs and I demonstrate how to feel the energy of another person by putting the hands up in an open fashion and feeling the energy from the partner's hands without touching them. They have difficulty connecting with each other. However when I work with them individually they illicit non-verbal responses of joy, perhaps as suggested by Trevarthan in Section IV, they feel connected to a mother. They will physically place their head on my chest to hear my heartbeat, or display strong feelings such as love. This type of communication makes them feel secure and playful.

Self Expression

Self-expression or the ability to improvise is an important aspect of self-expression. Having a microphone in hand inspires a certain percentage of participants to communicate. With some

participants we see orienting in process, because we do not know who they are talking to. Some are tickled by the sound of their voice. Some orient with sounds. Singing is a way for the participants to feel good about themselves, because it doesn't matter if they can sing and anything they communicate is openly received. For example, we have a kerokee machine which allows participants to sing along with tapes. Unlike the traditional Japanese kerokee machine which has a video screen, this kerokee provides no video prompting, only audio prompting. I was holding the microphone with one hand on top of Tyrone's and one hand on his shoulder, as we played the Stylistic's "You Make Me Feel Brand New." Although Tyrone could only sing a few words and a few notes, he was clearly feeling the music. His facial expressions displayed deep feelings and emotions which touched everyone in the room.

VIII Conclusion

Having researched the literature and seen connections which support the techniques I have developed in the process of Energetic Communication, I believe it is possible to tangibly translate this information into Energetic Education.

Charlie, one of my participants, (figure 1) engages in a physical series of patterns which he repeats all day long. These patterns include clapping his hands then hitting the side of his head, and remaining with one arm elbow bent over his head. He stops his patterns while he eats lunch. One day he was standing by the window in my class, repeating his patterns, and I held my right hand up to him. He slowly and shyly brought his left hand up to touch mine. I understood this to be a complete communication for Charlie at this point in time. This touch was all there was to say. All touch communicates, but Charlie's touch didn't just say "Thanks for communicating and giving me attention," (with a shy smile), it also said "This is all I have to say." Charlie stopped speaking four years ago when his mother died.

This paper proposes that educators consider a new paradigm that includes non-linear actions and the human energy field. A perspective of tolerance for change and chaos in the world as a model for interacting with the universe helps the educator to engage in a divergent thought process addressing problems through rational and analytical thinking. The concept of the human energy field expands the communication between teacher and

student. Morphic resonance supports new possibilities in working with the developmentally disabled, because they do possess thoughts, but not the faculties to communicate them as normally understood. Therefore, the teachers must be receptive to their energy and understand who they are. Most importantly, the perception of a universal concept of energy, allows us to use its resources as a vehicle to communicate and teach.

The path of Energetic Education lies within the body and beyond. Through the work of Richard Schechner we learn that ritual as well as ancient performance relies on the bodily-kinesthetic experience or the act of doing. By focusing on early physiological development of humans, an understanding of gestures which are the first system of communication, is reached. It is through the physical body that energy is manifested and the process of evolution and communication continues.

Play helps to provides a flow experience in theatre in education. Play has the characteristics of pleasure without external reward, spontaneous and active participation, making play an ideal way to reach all participant/students. The participant/student's concept of society can be played out in theatre education to help them gain a better understanding of themselves and society. The role-playing techniques of theatre in education offer playful and therapeutic exploration for high-functioning developmentally disabled participants. For low-functioning participants, simple playful acts help them to be released from their physical limitations.

My intent is to actualize the concepts of Energetic Communication, Energetic Education, Energetic Assessment, and Energetic Interaction, and create a clear context for this teaching methodology by the therapeutic theatre applications. The following is an intriguing excerpt from my journal which captures the process of this teaching:

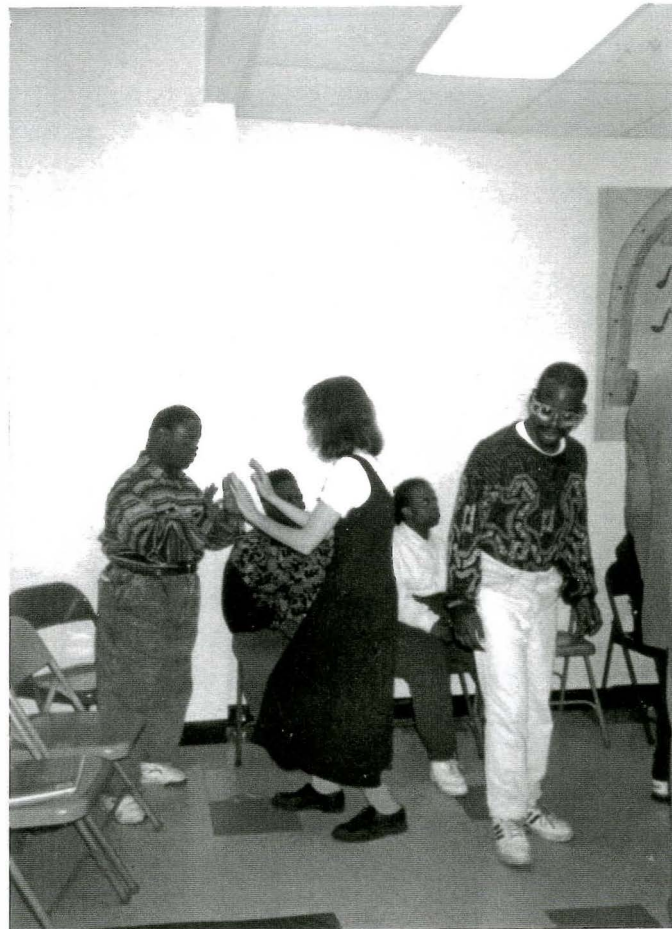
I was dancing with George, a downs-syndrome man in his twenties. He dances in a Kung Fu, break-dance style. We dance individually and then pass the energy through extended arms to the partner, who then dances individually and passes the energy back. Throughout the dance each partner sends the energy through an extended arm where hands are not touching but six inches apart.

In this one particular dance we were expressing as usual when I extended my hand to George and instead of responding with his dance he appeared to be internalizing the energy. Therefore his physical body appeared to be percolating or vibrating. I was both fascinated and concerned as I watched this physical behavior. He appeared to be drawing energy from me. After a short time I gently took my hand away and the behavior stopped. George took both of his hands, held them with elbows bent and stared at his hands as he closed his shaking fists. It was as if he was confirming his physical reality. (Jan. 30)

What possibilities for communication are ready and waiting in the Human Energy Field? The world of the developmentally disabled is not a world based on cause and effect because events, a reflection of their "intelligence" are not sequentially linked. Yet their internal monologue vibrates with life energy, an energy not polluted with the external rewards of society. These participants at Dean O'Hare are my teachers, because they have taught me that the human energy field is a viable method of Energetic Communication, a process I call Energetic Education. By utilizing this process in learning situations the field of

human energy moves humanely into the 21st Century.

Figure 1



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